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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,942	12/12/2003	Tomomi Oshiba	KOT-0008-C	5721
23413	7590	11/20/2007		
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER DOTE, JANIS L	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 11/20/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/734,942

Applicant(s)

OSHIBA ET AL.

Examiner

Janis L. Dote

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,8-11,16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) 18 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8-11,16,20 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1,8-11,16 and 18-21 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/505,459.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The examiner acknowledges the cancellation of claims 2-5, 12-15, and 17, the amendment to claim 1, and the addition of claims 20 and 21 filed on Jun. 7, 2007. Claims 1, 8-11, 16, and 18-21 are pending.

2. Claims 18 and 19 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicants timely traversed the restriction (election) requirement in the reply filed on Oct. 2, 2006.

3. The objection to the specification set forth in the office action mailed on Dec. 6, 2006, paragraph 4, has been withdrawn in response to the amended paragraph at page 36 of the specification filed on Jun. 7, 2007.

The rejections under 35 U.S.C. 102(b)/103(a) of claims 1-4 and 8-13 over US 5,376,493 (Kobayashi), as evidenced by ACS on STN File Reg. No. 147-14-8 and applicants' admission I, of claims 1-3, 8-12, 15, and 17 over US 5,645,967 (Sato), as evidenced by applicants' admissions III, and of claims 1-4, 8-13, and 17 over US 5,763,130 (Sasaki'130), as evidenced by applicants' admission III, set forth in the office action mailed

on Dec. 6, 2006, paragraphs 8, 10, and 13, respectively, have been withdrawn in response to the amendment to claim 1 filed on Jun. 7, 2007. That amendment to claim 1 added the requirements that the toner comprises "not less than 0.1% by weight of an element, which is provided in the form of a colorant pigment comprising copper phthalocyanine" and has "an isolation ratio of the element of not more than 10% and greater than 0.1% by number." Amended claim 1 also requires the binder resin to have a Mn of 1,000 to 100,000, a Mw of 2,000 to 1,000,000 and a molecular weight distribution (Mw/Mn) of 1.5 to 100. As discussed in the office action mailed on Dec. 6, 2006, Kobayashi and Sasaki'130 both exemplify toners comprising copper phthalocyanine and a binder resin. Sato also exemplifies toners comprising copper phthalocyanine and a binder resin. See Sato, Example Nos. 17 and 18 in Table 7 at cols. 23-24. However, none of the cited references teaches or suggests that the toner binder resins used in the toners have the molecular weight properties recited in instant claim 1. Nor is there enough information in the references for a person having ordinary skill in the art to reasonably presume that the references' binder resins have said molecular weight properties.

The rejections under 35 U.S.C. 102(b)/103(a) of claims 1-4 and 8-12 over US 5,856,055 (Ugai), as evidenced by applicants' admissions II, and of claims 1-4, 8-12, and 14 over US 5,672,454 (Sasaki'454), as evidenced by ACS on STN File Registry No. 1317-61-9; under 35 U.S.C. 102(e)/103(a) of claims 1-3, 5, 8-12, 15, and 17 over US 6,238,836 B1 (Nakamura), as evidenced by applicants' admissions IV, and under 35 U.S.C. 103(a) of claims 11 and 16 over US 4,702,987 (Fukuchi) combined with Nakamura, as evidenced by applicants' admission IV, set forth in the office action mailed on Dec. 6, 2006, paragraphs 9, 12, 11, and 14, respectively, have been withdrawn in response to the amendment to claim 1 filed on Jun. 7, 2007, described supra. None of cited references teaches or suggests a toner comprising a copper phthalocyanine pigment and satisfying the isolation ratio recited in instant claim 1.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 8-11, 16, 20, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to

particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in the phrase "not less than 0.1% by weight of an element, which is provided in the form of a colorant pigment comprising copper phthalocyanine" (emphasis added) because the claim does not define the term "element." In view of the recitation in claim 1 regarding the isolation ratio, it is not clear whether the element refers to the copper atom or to the nitrogen atoms present in copper phthalocyanine.

6. Claim 21 is objected to because of the following informalities:

The term "colorant" in the phrase "colorant has an average particle diameter of 10 to 200 nanometers" (emphasis added) lacks antecedent basis in claim 1, from which claim 21 depends. Claim 1 recites a toner comprising a "colorant pigment" (emphasis added).

Appropriate correction is required.

7. In the interest of compact prosecution, the examiner has interpreted the term "element" recited in claim 1 as referring

the copper in copper phthalocyanine pigment. Antecedent basis for the examiner's interpretation is found in the originally filed specification at page 5, line 10, page 6, line 1, and example 6 in Table 1 at pages 29 and in Table 2 at page 38. Rejections based on this interpretation set forth infra.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1, 8-10, and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 4,980,257 (Anno), as evidenced by applicants' admission at page 7, lines 7-10, and in Table 2 at page 38, and the accompanying text of the instant specification (applicants' admission III).

Anno discloses a blue colored toner comprising toner particles that comprise spherical core particles III surrounded by an outer shell of thermally fixed resin particles d and a. See Example 3 at col. 24, lines 1-9, and in Table 2 at cols. 25-26. Core particles III comprise a binder resin and the blue pigment copper phthalocyanine. See col. 9, lines 61-65, and Example 3 of core particles III production at col. 21,

lines 5-19. The binder resin has a number average molecular weight M_n of 8,000, a weight average molecular weight M_w of 150,000, and a molecular distribution M_w/M_n of 18.7. The values of M_n , M_w , and the ratio M_w/M_n are within the molecular weight ranges recited in instant claims 1 and 20. The toner is used with a magnetic carrier. Col. 23, lines 62-67, and col. 24, lines 4-11.

According to Anno, core particles III are obtained by an emulsion polymerization process, which meets the product-by-process limitation recited in instant claim 8. See col. 6, line 54, to col. 7, line 10; col. 20, lines 19-38; and col. 21, lines 10-12.

Copper phthalocyanine has a molecular weight of 576.08. The amount the copper phthalocyanine present in the toner is 4.2 wt% based on the weight of the toner. The amount of 4.2 wt% was determined from the information provided in Example 3. See col. 21, lines 5-19; col. 23, lines 43-50; col. 24, lines 4-9; and Table 2. (The amount of copper phthalocyanine in the core particles is 4.74 wt% (i.e., $[5 \text{ parts by weight of copper phthalocyanine} / (105.5 \text{ parts by weight})] \times 100$, where 105.5 parts by weight is the total weight of the core particles. The 4.2 wt% of copper phthalocyanine in the toner is product of

$$[4.74 \text{ wt\%} \times 100 \text{ parts by weight of core particles} / (113 \text{ parts by weight})] \times 100$$
, where 113 parts by weight is the sum of 100 parts by weight of core particles + 10 parts by weight of particles a + 3 parts by weight of particles d.) The copper in the toner particles is about 0.46 wt% based on the total weight of the toner particles (i.e., $(4.2 \text{ wt\%} \times [(63.54 \text{ atomic weight of Cu}) / (576.08 \text{ molecular weight of Cu phthalocyanine})] \times 100)$). The amount of copper phthalocyanine in the toner was determined from the information provided in Example 3. The copper amount of about 0.46 wt% meets the limitation "not less than 0.1 wt%" recited in instant claim 1.

Anno does not disclose that its toner comprises copper in an isolation ratio as recited in instant claim 1. The instant specification discloses that toners that comprise an element as recited in instant claim 1 in an isolation ratio as recited in instant claim 1, have stable chargeability after 10,000 copies, and provide toner images without fog even after 100,000 copies. See Table 2 at page 38, and the accompanying text. The instant specification at page 7, lines 7-10, states that "[w]hen the [isolation] ratio of the specified element is less than 0.1% by number, the electricity of the toner is lowered since the electricity giving ability of the specified element is become

[sic] insufficient." The Anno toner in Example 3 exhibits an initial chargeability of $-14 \mu\text{C/g}$ and after 50,000 copies, a chargeability of $-13 \mu\text{C/g}$. After 50,000 copies, the Anno toner in Example 3 exhibits stable chargeability and provides high quality toner images without inducing fog. See Example 3 in Table 4 and the accompanying text; and col. 29, lines 50-56. The charge quantities of -14 and $-13 \mu\text{C/g}$ do not appear to be "insufficient." Because the Anno toner meets the compositional limitations of the instant claims, but for the isolation ratio recited in the instant claims, and has the properties sought by applicants, it is reasonable to presume that the Anno toner comprises the element copper in an isolation ratio as recited in the instant claims. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

10. Claims 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,702,987 (Fukuchi) combined with Anno, as evidenced by applicants' admission III.

According to Fukuchi, non-contact developing is well known in the electrophotographic arts. Fukuchi discloses that "[i]n a color reproducing method in which toner images of plural colors are formed and superimposed on an image retainer (i.e.,

photosensitive member [another name for a photoreceptor]), non-contact developer method is appropriate, in which the development is conducted by keeping a magnetic brush [of a magnetic developer] out of contact with the image retainer so that the toner image or images previously developed may not be broken. The non-contact development method is a method in which an a.c. and/or d.c. bias is applied to the developer feeding member to form an alternating electric field in a developing region, while the developer on its member being kept away from the image retainer, thereby to float the toner and attach on the electrostatic latent image." Col. 1, lines 48-61.

Fukuchi teaches a particular multi-color image forming method comprising the following steps in order: (1) forming a first electrostatic latent image on the surface of a photosensitive drum, i.e., a photoreceptor, corresponding to a first color; (2) reversal developing the latent image in a non-contact manner with a two-component developer comprising a first color toner, such as a red toner, to form a first toner image; (3) forming a second electrostatic latent image on the photosensitive member corresponding to a second color; (4) reversal developing the latent image in a non-contact manner with a two-component developer comprising a second color toner,

such as a blue toner, to form a second toner image, which is superimposed on the first toner image; (5) repeating steps (3) and (4) to form a superimposed third black toner image on the photosensitive drum; (6) transferring the three superimposed toner images to a receiving member; and (7) fixing the transferred toner images to the receiving member. Fig. 10 and col. 10, line 22, to col. 12, line 10. The Fukuchi image forming process meets the process steps recited in instant claims 11 and 16, but for the use of the particular toner recited in the instant claims.

Anno, as evidenced by applicants' admission III teaches a two-component developer comprising a magnetic carrier and a blue colored toner, as described in paragraph 9 above, which is incorporated herein by reference. For the reasons discussed in paragraph 9 above, it is reasonable to presume that the Anno blue colored toner comprises the element copper in an isolation ratio as recited in instant claims 11 and 16.

According to Anno, its toner is "excellent in flowability and sufficient in charging property, amount of development, and cleaning property." The toner is "capable of stably producing an image of fine delineation and high quality without inducing

such drawbacks as drift and fogging of a developed image."

Col. 29, lines 50-56 and Table 4, Example 3.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Anno, to use the two-component developer taught by Anno as the two-component developer comprising a magnetic carrier and a blue colored toner in the image forming method disclosed by Fukuchi. That person would have had a reasonable expectation of successfully obtaining a multi-color imaging forming method that provides repeatedly a multi-color image that comprises a good, high quality blue image without inducing fogging superimposed on the first toner image.

11. Claims 1, 8-11, 16, and 20 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 6,013,406 (Moriki), as evidenced by ACS on STN File Reg. No. 147-14-8 and applicants' admission III.

Moriki discloses a toner comprising toner particles that comprise a binder resin and the colorant C.I. Pigment Blue 15:3, which is identified as copper phthalocyanine (see ACS File Reg. No. 147-14-8). See toner A in examples 1 and 2 at col. 44,

line 56, to col. 45, line 51, and in Table 1 at cols. 67-68. The binder resin has a number average molecular weight M_n of 10,000, a weight average molecular weight M_w of 160,000, and a molecular distribution M_w/M_n of 16. The values of M_n , M_w , and the ratio M_w/M_n are within the molecular weight ranges recited in instant claims 1 and 20. The toner can be used with a magnetic carrier. See example 1.

Copper phthalocyanine has a molecular weight of 576.08. The amount the copper phthalocyanine present in the toner is 3.73 wt% based on the weight of the toner. The amount of 3.73 wt% was determined from the information provided in example 1. The copper in the toner particles is about 0.41 wt% based on the total weight of the toner particles (i.e., $(3.73 \text{ wt\%} \times ((63.54 \text{ atomic weight of Cu}) / (576.08 \text{ molecular weight of Cu phthalocyanine})) \times 100))$. The copper amount of about 0.41 wt% meets the limitation "not less than 0.1 wt%" recited in instant claim 1.

Moriki further discloses that said toner can be used in a process comprising the steps recited in instant claims 11 and 16. Process B at col. 51, line 31, to col. 52, line 4. In the Moriki process B, the developing step uses a non-contact jumping development system, where the gap β between the

photoreceptor and the developing sleeve is 500 μm . Fig. 12; col. 32, line 52, to col. 33, line 33; and col. 51, line 51, to col. 52, line 1.

Moriki does not disclose that its toner comprises copper in an isolation ratio as recited in instant claim 1. The instant specification discloses that toners that comprise an element as recited in instant claim 1 in an isolation ratio as recited in instant claim 1, have stable chargeability after 10,000 copies, and provide toner images without fog even after 100,000 copies. See Table 2 at page 38, and the accompanying text. The instant specification at page 7, lines 7-10, states that "[w]hen the [isolation] ratio of the specified element is less than 0.1% by number, the electricity of the toner is lowered since the electricity giving ability of the specified element is become [sic] insufficient." In the Moriki process B, the Moriki toner in Example 2 exhibits an initial chargeability of $-29 \mu\text{C/g}$ and after 20,000 copies, a chargeability of $-29 \mu\text{C/g}$. After 20,000 copies, the Moriki toner in Example 2 exhibits stable chargeability and provides high quality toner images with less than 2% fogging. See Example 2 in Table 2 and the accompanying text. The charge quantity of $-29 \mu\text{C/g}$ does not appear to be "insufficient." Because the Moriki toner meets the

compositional limitations of the instant claims, but for the isolation ratio recited in the instant claims, and has the properties sought by applicants, it is reasonable to presume that the Moriki toner comprises the element copper in an isolation ratio as recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Instant claim 8 requires that the toner of claim 1 be obtained by emulsion polymerization. Thus, the toner is described in product-by-process format. Moriki does not exemplify a toner obtained by emulsion polymerization as recited in instant claim 8. Moriki's toner is obtained by a suspension polymerization method. See col. 22, line 34, to col. 23, line 31, and Example 1. As discussed above, the Moriki toner has the properties sought by applicants, and appears to comprise the element copper in an isolation ratio as recited in the instant claims. Thus, Moriki's process appears to produce a toner that is the same or similar to that made by the emulsion polymerization process recited in the instant claim. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

12. Claim 21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Neither Anno nor Moriki describes the particle size of the copper phthalocyanine pigment used in the toners. Nor do the references teach or suggest that the copper phthalocyanine have a primary particle diameter of 2 to 200 nanometers as recited in instant claim 21.

13. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Application/Control
Number: 10/734,942
Art Unit: 1795

Page 17

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JLD
Nov. 14, 2007

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GROUP 1500-
1700